

## REMARKS/ARGUMENTS

### **Claim Rejections – 35 USC 103**

Claims 1, 3, 8-10 and 15-22 are rejected under 35 U.S.C. 103(a) as being obvious over Fukumoto et al. (US 6493296) in view of Ma et al. (US 6801486).

5 **Response:**

Claim 1

In the Office action dated 09/25/2007, Examiner states that Ma et al. teaches controlling the tilt to the angle having the lowest amplitude DPD signal. The applicant respectfully disagrees. Ma merely discloses obtaining a signal to monitor the state of an optical recording/reproducing system by **summing** phase difference signals **detected** according to a **differential phase detection (DPD) “method”** (col. 1, lines 35-38); however, Ma’s monitoring signal derived from a summation result of the detected phase difference signals is by no means a DPD signal of the claimed invention. Further explanation is given as follows.

As shown in Fig. 2 and described in pertinent specification paragraph [0021] of the instant application, applicant clearly points out that the DPD signal is derived from a **subtraction** result of phase comparison outputs corresponding to one **signal sum (A+D)** and the other **signal sum (B+C)**, where the signal sum (A+D) is derived from signals of the sensors A and D disposed in one **diagonal** direction of the OEIC, and signal sum (B+C) is derived from signals of the sensors B and C disposed in the other **diagonal** direction of the 20 OEIC.

Regarding Ma’s teachings, Ma discloses that the monitoring signal Mo is derived from a **summation** result of phase comparison outputs corresponding to one **signal sum (A+C)** and the other **signal sum (B+D)**, where the signal sum (A+C) is derived from signals of the sensor areas A and C disposed in one **diagonal** direction of the photodetector, and signal sum 25 (B+D) is derived from signals of the sensor areas B and C disposed in the other **diagonal** direction of the photodetector (Fig. 2 and col. 4, lines 28-54). Comparing Ma’s Fig. 2 with applicant’s Fig. 2, Ma’s circuit architecture for obtaining the monitoring signal is quite similar

to applicant's circuit architecture for obtaining the DPD signal; however, Ma's circuit architecture uses an adder to sum the outputs of the preceding phase difference detector, while applicant's circuit architecture uses a subtractor to subtract one output from the other output of the preceding phase comparator. For the person skilled in the art, the physical  
5 meaning of Ma's monitoring signal, derived from summation, is totally different from the DPD signal, derived from subtraction, which is claimed in this invention. As one can see, the monitoring signal taught by Ma is not a DPD signal due to the fact that the monitoring signal is derived from a summation result, instead of a subtraction result.

In addition, in col. 4, line 60 – col. 5, line 3, Ma discloses when the optical system  
10 employing a monitoring signal generation apparatus according to Ma's invention, a tracking error detection apparatus employing DPD method may also include the photodetector, phase difference detector and low pass-filters used in the monitoring signal generation apparatus, and the tracking error signal detection is designed to further include a **subtractor** for performing a subtraction on the first and second phase difference signals generated from the  
15 phase difference detector to output a tracking error signal ( i.e., a DPD signal). In other words, Ma explicitly states that the monitoring signal is different from a DPD signal that serves as a tracking servo signal. Therefore, the monitoring signal taught by Ma fails to read on the claimed DPD signal recited in applicant's claim 1.

In light of above statements, the applicant respectfully points out that notwithstanding  
20 Ma disclose the DPD signal, tracking error signal, Ma's disclosure is silent on controlling the tilt angle according to the DPD signal, and is silent on the tilt search block finding an optimal tilt angle having a lowest amplitude DPD signal. Therefore, the claimed limitations "the tilt search block controls the tilt servo to adjust the tilt angle between the optical disc and the object lens according to the **DPD signal**" and "the tilt search block finding an optimal tilt  
25 angle having a **lowest amplitude DPD signal**" are neither taught nor suggested by Fukumoto in view of Ma (*emphasis added*). Claim 1 should be found allowable over the cited references. Withdrawal of the rejection to claim 1 is respectfully requested.

Claim 3

Claim 3 is dependent upon claim 1, and should be allowed if claim 1 is found allowable.

Claim 8

5 In light of above arguments of claim 1, the applicant asserts that claim 8, having similar limitations recited therein, should be found allowable over the cited references.  
Reconsideration of claim 8 is respectfully requested.

Claims 9-10 and 15-18

10 Claims 9-10 and 15-18 are dependent upon claims 1 and 8 respectively, and should be allowed if claims 1 and 8 are found allowable.

Claims 19 and 20

15 Note is made by the applicant that upon careful review in light of Fukumoto's and Ma's teachings, neither Fukumoto nor Ma teaches referring to the DPD signal solely for achieving the tilt calibration. As Fukumoto's teaching, col. 7 lines46-50, the till control motor 102 is driven by a differential signal between the DPP signal and the DPD signal. In addition, according to Ma's disclosure, Ma even does not teach using the DPD signal to control the tilt angle. The applicant therefore asserts that the claimed limitations of adjusting the tilt angle  
20 between the optical disc and the object lens according to only the DPD signal are not taught or suggested by Fukumoto in view of Ma (*emphasis added*). Claims 19 and 20 therefore should be found allowable over the cited references. Withdrawal of the rejection to claims 19 and 20 are respectfully requested.

25 Claims 21 and 22

In above arguments of claim 1, the applicant points out that Ma's disclosure is silent on controlling the tilt angle to a plurality of angles, and finding a specific tilt from the plurality of angles according to the DPD signal. Therefore, that the claimed limitation "finding a

specific tilt angle from the plurality of angles **according to the DPD signal**” is neither taught nor suggested by Fukumoto in view of Ma. (*emphasis added*) Claims 21 and 22 should be found allowable over the cited references.

5        Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al. and Ma et al. in view of Scheffler (US 5021893).

**Response:**

Claim 2 is dependent upon claim 1, and should be allowed if claim 1 is found allowable.

10        Claims 5-7 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al. and Ma et al. in view of Gleim (US 4888754).

**Response:**

Claims 5-7 and 12-14 are dependent upon claims 1 and 8 respectively, and should be allowed if claims 1 and 8 are found allowable.

15        As the rejections under 35 U.S.C. 103(a) have been overcome, the applicant respectfully requests that a timely Notice of Allowance be issued in this case.

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Sincerely yours,



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10 Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 13 hours behind the Taiwan time, i.e. 9 AM in D.C. = 10 PM in Taiwan.)